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# What We Regret Most Are Lost Opportunities: A Theory of Regret Intensity

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*A recent theory (Roese & Summerville, 2005) has suggested that regret is intensified by perceptions of future opportunity. In this work, however, it is proposed that feelings of regret are more likely elicited by perceptions of lost opportunity: People regret outcomes that could have been changed in the past but can no longer be changed and for which people experience low psychological closure. Consistent with the lost opportunity principle, Study 1 revealed that regretted experiences in the most commonly regretted life domains are perceived as offering the least opportunity for improvement in the future, Study 2 indicated that people experience the most regret for outcomes that are not repeatable, and Study 3 revealed that perceptions of higher past than future opportunities and low psychological closure predict regret intensity. Discussion focuses on the hope-inducing yet ephemeral nature of perceived future opportunity and on the relationship between dissonance reduction and closure.*

**Keywords:** *regret; opportunity; closure; counterfactual thinking; cognitive dissonance*

The follies which a man regrets most in his life, are those which he didn't commit when he had the opportunity.

—Helen Rowland (1922/2007 p. 119)

Regret is a common and distressing emotional experience that has long-term consequences for health and well-being (Landman, 1987; Lecci, Okun, & Karoly, 1994; Wrosch, Bauer, & Scheier, 2005). Yet as painful

and debilitating as it may be, regret can in theory also motivate corrective action (Markman, McMullen, & Elizaga, 2008; Roese, 1994; Zeelenberg, 1999). If regret arises primarily following outcomes that offer opportunities for improvement, then the experience of regret may well be worth the emotional pain. The purpose of this research was to determine whether people experience greater regret over things they believe they can change or things they believe they once could but now cannot change. Contrary to a recent theory of regret (Roese & Summerville, 2005; Saffrey, Summerville, & Roese, 2008), this research suggests strongly that people regret lost opportunities. As Helen Rowland points out in the quotation above, the opportunity one once had but now has not elicits the most intense regret.

## THE (FUTURE) OPPORTUNITY PRINCIPLE

Regret has been described as a “comparison-based emotion of self-blame, experienced when people realize or imagine that their present situation would have been better had they decided differently in the past”

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(Zeelenberg & Pieters, 2007, p. 4). It is frequently suggested that the function of regret is to help people learn from their mistakes (e.g., Coricelli et al., 2005; Epstude & Roese, 2008). That is, regret should facilitate the identification and enactment of behaviors that will prevent one from making the same mistake again. For example, Landman and Manis (1992) found that most people wish they had done something differently in their lives, suggesting that they regret these decisions. Among such life regrets, failing to complete one's education and making poor career or relationship choices were the most common. Moreover, those who recorded regrets about the past were more likely to imagine ways that they could improve in the future (Landman, Vandewater, Stewart, & Malley, 1995). Based on such findings, Landman suggested that "fully experiencing regrets may be the miracle ingredient to transforming them" (D. Gilbert, 1993).

A frequently reported characteristic of life regrets is the tendency for people to regret actions (errors of commission) more than inactions (errors of omission). For example, people regret switching from a correct answer to an incorrect answer more than they regret staying with an incorrect answer (Kruger, Wirtz, & Miller, 2005). This action effect suggests that people experience regret when they make mistakes rather than when they miss opportunities to act. Conversely, however, people sometimes report regretting inactions more than actions, such as after repeated failures (Zeelenberg, van den Bos, van Dijk, & Pieters, 2002) or following the passage of time (Gilovich & Medvec, 1994). Moreover, the extent to which the unwanted outcome perseverates in memory is a positive predictor of regret intensity (Kruger et al., 2005; Savitsky, Medvec, & Gilovich, 1997). In either case, the experience of regret may lead to ruminations about other paths that could have been taken. Although such ruminations can be painful, they keep incomplete goals in mind so as to maximize the likelihood of acting on future opportunities to fulfill goals (Förster, Liberman, & Higgins, 2005). Thus, experiencing regret and its associated ruminations can motivate people to act upon opportunities to remedy the regretted outcome. For example, consumers who regret purchasing unsatisfactory services are more likely to switch providers (Zeelenberg & Pieters, 2004). From this perspective, then, regret is a hot cognition that highlights opportunities for change.

Recently, Roese and Summerville (2005) argued that people experience the most regret in the face of modifiable outcomes, a notion they dubbed the *opportunity principle*. According to Roese and Summerville, opportunity represents "an open rather than a closed door to further action in the service of correction, advancement, and

**TABLE 1:** Perceived Opportunity, Regret, and Satisfaction by Life Domain in Study 1

Domain	Future	Past	Regret	Satisfaction
	Opportunity	Opportunity		
Education	3.8 (1.4)	4.5 (1.0)	3.2 (1.8)	4.9 (1.6)
Career	3.7 (1.3)	4.2 (1.1)	2.8 (1.7)	5.0 (1.6)
Romance	4.1 (1.4)	4.3 (1.3)	2.9 (1.8)	5.0 (1.7)
Parenting	4.2 (1.2)	4.8 (1.0)	3.1 (1.5)	5.2 (1.3)
Self	4.9 (1.0)	4.8 (1.0)	3.4 (1.5)	4.8 (1.5)
Leisure	4.3 (1.0)	4.0 (1.1)	2.6 (1.5)	4.8 (1.4)
Finance	4.2 (1.0)	4.1 (1.0)	3.6 (1.6)	4.4 (1.5)
Family	4.2 (1.3)	4.5 (1.2)	3.3 (1.8)	5.0 (1.5)
Health	4.9 (0.7)	4.9 (0.7)	3.7 (1.7)	4.4 (1.4)
Friends	4.8 (0.9)	4.8 (0.9)	2.8 (1.5)	5.0 (1.6)
Spirituality	5.5 (0.8)	5.4 (0.8)	2.9 (1.8)	5.0 (1.8)
Community	4.6 (1.0)	4.3 (1.1)	2.9 (1.3)	5.0 (1.4)

NOTE: Values range from 1 to 6. Standard deviations are given in parentheses.

betterment, defined in terms of the individual's perception of situational features or personal talents that enable such pursuit" (p. 1273). Thus, they argued that regret is intensified following outcomes that are perceived to afford change but is minimized in the face of unchangeable circumstances through dissonance reduction and emotion regulation efforts. Because their focus was on future possibilities for change (i.e., further action) and to distinguish it from our own view of the role of opportunity in regret, we refer to Roese and Summerville's conceptualization as the *future opportunity principle*.

To provide evidence for the future opportunity principle, Roese and Summerville (2005) presented the results of three series of studies. First, they conducted a meta-analysis of existing surveys of life regrets. The results showed that the life domains regretted most frequently were education, career, and romance, domains Roese and Summerville alleged to offer the greatest potential for change. ("New and further education . . . is available to nearly all individuals," p. 1282.) Life domains regretted less frequently were friends, spirituality, and community, domains alleged to offer less potential for change. Table 1 displays the 12 most common life domains of regret in descending order of frequency as revealed by their meta-analysis.

Second, Roese and Summerville (2005) asked undergraduate students to choose the 1 life domain among these 12 in which they felt they had the most freedom to do what they wanted (high opportunity) and the 1 in which they felt their choices were most constrained (low opportunity). When opportunity was defined in this fashion as degree of constraint, students tended to select as domains of high opportunity those that were reported as frequently regretted in the meta-analysis, such as

education and romance. The students were next asked to describe a regretted experience in each life domain and rate its intensity. Consistent with the future opportunity principle, students reported more intense regret in domains they had chosen as high (most freedom) versus low (most constraint) opportunity domains.

Third, Roesse and Summerville (2005) manipulated the degree to which a given domain (e.g., relationships) was perceived as high versus low in opportunity, and then they measured the intensity of regret afforded to life regrets in that domain. The manipulation successfully altered perceptions of opportunity but did not affect regret intensity. Roesse and Summerville concluded that the future opportunity principle is not a product of framing during recollection but rather a product of construal and cognitive dissonance reduction attempts at the time the event was experienced.

Additional findings can also be construed as offering support for the future opportunity principle. For example, developmental changes in the content of regrets correspond to shifts in age-related concerns. Specifically, younger adults are focused on relationship and leisure goals more than are older adults, who are focused on career and family goals (Jokisaari, 2004). Consistent with the future opportunity principle, these findings suggest that people regret their failures to achieve current goals that they could still alter with additional goal-pursuit behaviors.

### SHORTCOMINGS OF THE FUTURE OPPORTUNITY PRINCIPLE

On the other hand, some empirical findings are inconsistent with the future opportunity principle and its implication that people feel more intense regret when change is possible. For instance, people who habitually consider future consequences (and how they may avoid future negative outcomes) experience less, rather than more, intense regret after a negative outcome (Boninger, Gleicher, & Strathman, 1994). In addition, there is evidence to suggest that people feel less, rather than more, intense regret in instances where there are clear future possibilities for remedying the regret (e.g., McMullen & Markman, 2002; Sanna, 1997; Summerville & Roesse, 2008; see also Lockwood & Kunda, 1997). Moreover, although older adults perceive less opportunity to change their life regrets, they are actually more negatively affected by these regrets (Wrosch et al., 2005)—the opposite of the pattern predicted by the future opportunity principle.

#### *Life Domains*

Additionally, the life domains that are reported as most frequently regretted do not correspond well to the

future opportunity principle. Education is the most commonly regretted life domain, even among the oldest adults surveyed (DeGenova, 1992; Hattiangadi, Medvec, & Gilovich, 1995; Lecci et al., 1994; Wrosch & Heckhausen, 2002). Clearly, however, 70 year olds lack the opportunities available to 18 year olds to advance their education. Nevertheless, people continue to regret their educational choices regardless of the opportunities they have to change them and despite the fact that their goals shift away from gaining knowledge as they grow older and perceive their future horizons as limited (Lang & Carstensen, 2002).

Throughout one's life, opportunities to modify one's career or romantic life (i.e., more commonly regretted domains) almost undoubtedly arise less frequently and less easily than do opportunities to make new friends, enhance one's community involvement, or modify one's spiritual beliefs (i.e., less commonly regretted domains). It is relatively simple to make a new friend, to volunteer at a different community organization, or to attend a different place of worship. Thus, it is far from apparent that the most commonly regretted life domains are those in which people have (or even perceive) the greatest opportunity for further corrective action.

#### *Concerns Regarding Methodology and Data Interpretation*

More problematic is that Roesse and Summerville's (2005) data do not provide a clear link between opportunity and regret. Their meta-analysis showed which domains are most commonly regretted but provided no information about perceived opportunity. In Study 2a, college students generated an ordering of the most regretted domains similar to that obtained in previous studies with nonstudents, but the study again provided no information about opportunity. Finally, Study Set 3 reported only null effects of perceived opportunity on regret.

In fact, only one of Roesse and Summerville's (2005) studies reported a direct relationship between opportunity and regret. In Study 2b, participants reported experiencing more intense regret in the domain they selected as high in opportunity (defined as having the most freedom to make changes) than in the domain they selected as low in opportunity (defined as having the most constraints). However, several methodological aspects of Study 2b cloud the interpretation of this finding. First, the manipulation of opportunity confounded it with externality of control and the possession of requisite skills. Specifically, a high opportunity domain was defined as one in which "you have the greatest freedom . . . and the most effective skills," whereas a low opportunity domain was defined as one in which "your choices are constrained, decided often by other people, or simply tough to put into effect" (Roesse & Summerville, 2005, p. 1279).

Second, the methodology did not allow for a direct inference of perceived opportunity regarding the life regret itself. Participants in Study 2b first selected two general life domains and then recalled a regretted experience within each domain. However, the experience the participant selected for each general domain may not have been representative of that domain in terms of opportunity. For example, even though a participant might characterize romance generally as a high-opportunity domain, the specific regretted romantic experience reported when prompted may not have offered any opportunity for improvement.

Third, the instructions participants received in Study 2b were imprecise with regard to the temporal nature of opportunity. It is unclear whether a domain in which one's choices are constrained referred to choices that have been constrained in the past, or are expected to be constrained in the future. Indeed, participants' confusion about the nature of high versus low opportunity given these definitions is suggested by the fact that education and spirituality appeared as both high and low opportunity domains in Study 2b. As a consequence, the only study that purports to show a direct link between opportunity and regret is subject to alternative interpretations, thereby leaving a paucity of clear evidence for the future opportunity principle.

### *Theoretical Concerns*

Roese and Summerville (2005) cited studies by D. T. Gilbert and Ebert (2002) and Iyengar and Lepper (2000) as evidence that opportunity interferes with dissonance reduction and increases regret. Gilbert and Ebert manipulated the finality of participants' choices and found that participants were more dissatisfied if they were told they could choose a different option in the future. Along similar lines, Iyengar and Lepper varied the number of options available and found that participants were more dissatisfied with their choices if additional options were available. Roese and Summerville interpreted the results of these studies to mean that making a nonbinding choice or having a large number of options gives rise to a perception of future opportunity to improve, thereby lessening the need to reduce cognitive dissonance and intensifying regret.

In our view, however, Roese and Summerville's (2005) construal of these studies fails to account for the temporal aspect of perceived opportunity. Participants given a nonbinding choice or a large number of options may perceive a good deal of opportunity before they make their choice. However, once the choice has been made, they may perceive limited opportunities to improve their lot. In fact, only one participant in D. T. Gilbert and Ebert's (2002) nonbinding choice condition

actually changed his or her choice, despite being provided the opportunity to do so. As social psychologists have long known, even the most tentative of steps taken toward making a choice commits people to that course of action and renders them unwilling to change later (e.g., Cialdini, Cacioppo, Bassett, & Miller, 1978). By the time measures of satisfaction are administered, participants perceive the opportunity for change as lost. Put differently, choice reversibility enhances dissatisfaction not because an opportunity for corrective action is perceived to exist in the future but because regret is felt over not having exercised the opportunity to take corrective steps in the past. Because the temporal nature of opportunity appears to be critical to the experience of regret, we distinguish past opportunity from future opportunity in this research.

### *The Lost Opportunity Principle*

In contrast to Roese and Summerville's (2005) future opportunity formulation, we argue that perceptions of lost opportunity play a pivotal role in accounting for the experience of regret. A lost opportunity is defined as an undesired outcome that could have been avoided or prevented at the time of its occurrence (high past opportunity) but can no longer be remedied at the present time (low future opportunity). Because perceiving future opportunities involves envisioning multiple paths toward goal achievement, such perceptions should give rise to feelings of hope (Snyder, 2002) and diminish rather than intensify regret. Conversely, regret should intensify when people feel that they could have made better choices in the past but now perceive limited opportunities to take corrective action in the future. As windows of future opportunity close, feelings of hopelessness may be magnified.

Another factor that may be critical in accounting for the experience of regret is low closure, conceptualized as the subjective sense of "pastness" surrounding a remembered life experience (Beike, Adams, & Wirth-Beaumont, 2007; Beike & Wirth-Beaumont, 2005; Ritchie et al., 2006; Skitka, Bauman, & Mullen, 2004). Closure perceptions are not a veridical readout of the length of time that has passed since an experience or an assessment of the likelihood of future change. Instead, low closure is elicited when one's memory for an experience evokes emotions (Beike & Wirth-Beaumont, 2005). The antecedents of low closure are disparate but may include psychological processes such as excessive rumination and meaning-making attempts, contextual elements such as the unpleasantness of the experience, and individual difference factors such as a tendency to focus on emotions (e.g., Beike & Wirth-Beaumont, 2005; Coifman, Bonanno, Ray, & Gross, 2007; Davis, Wortman, Lehman, & Silver, 2000; Martin & Tesser,

1996). Importantly, low closure makes a past experience feel psychologically unfinished and unresolved (Beike & Wirth-Beaumont, 2005; Beike et al., 2007; Savitsky et al., 1997). Low closure is experienced as aversive and is associated with reductions in state self-esteem (Beike, Kleinknecht, & Wirth-Beaumont, 2004) and persistent negative affect over time (Beike & Crone, 2008; Ritchie et al., 2006). Because it renders lost opportunities salient, we hypothesized that low closure should be associated with increased regret.

The lost opportunity principle is related to the concept of lost possible selves (King & Hicks, 2007). When people believe they may achieve a desired self (and thus experience goal personalization; Markus & Nurius, 1986), people strive to become that self. When the opportunity to achieve the desired self is past, people tend to shed the past possible self. However, it is sometimes difficult to shed past possible selves, and thus they remain poignantly alive, or salient, and people experience greater regret to the extent that they remain engaged with these lost possible selves. For instance, a divorced woman with a salient lost possible self of being married to her ex-husband would feel a great deal of regret (King & Raspin, 2004). Being able to disengage from that lost possible self, and the former goal that the lost possible self represents, would allow her to move forward in personality development and to feel less regret (King & Hicks, 2007). In short, perceptions of diminished future (relative to past) opportunity make possible selves feel lost, and concomitant low closure makes lost possible selves salient. Regret should, therefore, be most intense when people perceive limited opportunities to remedy undesired outcomes but cannot suspend their ruminations about how these outcomes could (and should) have been better. As Zeelenberg and Pieters (2007) recently noted, "Irreversible decisions that lead to large and easily made discrepancies between what is and could have been that are important and salient may be as important and perhaps much more so" (p. 33) than decisions that afford future opportunities.

We present the results of three studies that examined the lost opportunity principle alongside Roese and Summerville's (2005) future opportunity principle. Study 1 focused on a first component of the lost opportunity principle: high past versus low future opportunity. Studies 2 and 3 added measures of a second component: psychological closure. Study 1 tested whether the most frequently regretted domains are high in perceived future opportunity, as the future opportunity principle predicts, or higher in past than future opportunity, as the lost opportunity principle predicts. Study 2 compared outcomes that offer future opportunities with those that reflect lost opportunities and measured regret intensity. Finally, Study 3 examined the

extent to which perceptions of past opportunity, future opportunity, and closure predicted regret intensity among a diverse sample of adults.

## STUDY 1

The purpose of Study 1 was to examine perceptions of opportunity within the 12 most frequently regretted domains reported in Roese and Summerville's (2005) meta-analysis. Participants were asked to think about each domain and to rate the extent to which they (a) had an opportunity in the past to make changes in that domain, (b) will have an opportunity in the future to make changes in that domain, (c) presently regret their choices in that domain, and (d) are satisfied with their choices in that domain. The future opportunity principle predicts that the more commonly regretted domains (e.g., career, education, and romance) would be perceived as providing greater opportunities in the future to make changes than would the less commonly regretted domains (e.g., community and spirituality). Conversely, the lost opportunity principle predicts that the more commonly regretted domains would be perceived as offering fewer opportunities in the future to make changes than would the less commonly regretted domains and also as having provided greater opportunities in the past than they do in the future to make changes.

### Method

*Participants.* Sixty-eight participants (12 male, 51 female, and 5 who chose not to report their gender) completed an online survey voluntarily. Potential participants were invited via an e-mail message containing a link to the survey Web site, forwarded to them by a member of the first author's lab group. Lab members were asked to send the message to anyone they knew who was at least 40 years of age. The age restriction was imposed to increase the likelihood that the participant had experiences in all 12 life domains. The participants ranged in age from 40 to 73. Sixty participants were Caucasian, 2 were Native American, 1 was Asian American, 1 was African American, and the remainder chose not to identify their ethnicity.

*Procedure.* Participants were asked to consider each of the 12 life domains identified by the Roese and Summerville (2005) meta-analysis, one at a time. Four different random sequences of the 12 domains were constructed, with participants pseudo-randomly assigned to a sequence. Participants considered each domain and then rated how much opportunity they had in the past to make changes in that domain, how much opportunity

they would have in the future to make changes in that domain, the intensity of regret they currently experience regarding their choices and decisions in that domain, and the intensity of satisfaction they currently experience in that domain. For example, the career domain–past opportunity item read as follows: “Consider the domain of . . . Career: jobs, employment, earning a living (e.g., ‘If only I were a dentist’). In the past, which of these options best describes the amount of opportunity you HAD to make changes or improvements in your life in terms of your career?” Six options were listed, ranging from 1 = *no opportunity* to 6 = *unlimited opportunity*. For regret and satisfaction, the options ranged from 1 = *not at all* to 7 = *intensely*. After participants completed the survey, they were debriefed and thanked.

### Results and Discussion

Table 1 shows the results. The domains are rank-ordered in line with Roese and Summerville’s (2005) meta-analysis, with the more commonly regretted domains presented first. The first column depicts perceptions of future opportunity for each domain. The remaining columns depict perceived past opportunity, regret, and satisfaction. Note that the more commonly regretted domains were perceived as offering the least (not the most) future opportunity. For example, perceived future opportunity for education was rated at  $M = 3.8$  and career at  $M = 3.7$ , whereas friends were rated at  $M = 4.8$  and spirituality at  $M = 5.5$ . Moreover, and in a manner consistent with the lost opportunity principle, the more commonly regretted domains showed the greatest difference between past and future opportunity. To illustrate, for education past opportunity was rated at  $M = 4.5$  and future opportunity at  $M = 3.8$ , and for career past opportunity was rated at  $M = 4.2$  and future opportunity at  $M = 3.7$ .

Data analysis continued by grouping the domains into the six more commonly and the six less commonly regretted, based on Roese and Summerville’s (2005) meta-analysis. The average future opportunity and past opportunity ratings were then submitted to a 2 (domain category)  $\times$  2 (past vs. future opportunity rating) repeated measures ANOVA to determine whether the more commonly regretted domains showed a pattern of future opportunity (higher perceived future opportunity in more commonly regretted domains) or a pattern of lost opportunity (lower perceived future opportunity than past opportunity, and lower perceived future opportunity in more commonly regretted domains).

Consistent with the lost opportunity principle, this analysis revealed the predicted Domain Type  $\times$  Opportunity Rating interaction,  $F(1, 67) = 54.54$ ,  $p < .001$ ,  $\eta^2 = .45$ . Whereas the more commonly

regretted domains were perceived as being lower in future opportunity than past opportunity,  $M_s = 4.2$  vs.  $4.4$ ,  $t(67) = 2.83$ ,  $p < .007$ ,  $d = 0.3$ , the less commonly regretted domains were perceived as being higher in future opportunity than past opportunity,  $M_s = 4.6$  vs.  $4.2$ ,  $t(67) = 4.97$ ,  $p < .001$ ,  $d = 0.6$ .

The average regret and satisfaction scores were submitted to a similar ANOVA that revealed only that participants experienced less regret than satisfaction in these domains,  $F(1, 67) = 77.51$ ,  $p < .001$ ,  $\eta^2 = .54$ . Overall, then, the intensity of regret in each life domain did not correspond to the frequency of regret in Roese and Summerville’s (2005) meta-analysis. Rather, the results indicated that the most frequently regretted domains in that meta-analysis (e.g., education) were perceived as offering the least, as opposed to the most, future opportunity. The results supported the lost opportunity principle in that the most commonly regretted life domains evoked a pattern of greater perceived past opportunity than perceived future opportunity. In other words, the most commonly regretted domains were characterized by perceptions of lost opportunity.

### STUDY 2

The purpose of Study 2 was to examine the future opportunity principle alongside the lost opportunity principle experimentally. The design of the study was modeled after Roese and Summerville’s (2005) Study 2b but included several modifications to more clearly isolate future opportunity. First, the confounding of external control, opportunity, and constraint was eliminated and the degree of opportunity regarding the outcome rather than the life domain was manipulated. Second, the manipulation of opportunity clearly referred to future and not past opportunity. Third, past and future opportunity perceptions were both measured, as in Study 1.

To operationalize perceived future opportunity, we manipulated outcome repeatability (Markman, Gavanski, Sherman, & McMullen, 1993). Specifically, participants were instructed to think about an outcome that would probably not be repeated in the near and foreseeable future and an outcome that might be repeated in the near and foreseeable future. Thus, the repeatable outcome represented high future opportunity, and the nonrepeatable outcome represented lost opportunity, as opportunities to improve on the outcome in the future did not exist. We also assessed perceptions of psychological closure regarding the regretted life events. To the extent that a life regret is low in psychological closure, regret should be intensified, as this indicates continued engagement with a lost possible self (King & Hicks, 2007).

Participants described a regretted life event that they considered to be repeatable (future opportunity) and a

regretted life event that they considered to be nonrepeatable (lost opportunity). The intensity of regret they experienced after thinking about each life event was measured as well as the sense of closure they perceived for each (operationalized as continued thinking about the life regret; Beike & Wirth-Beaumont, 2005). The lost opportunity principle predicts that participants would experience greater regret after recollecting the nonrepeatable than after recollecting the repeatable regretted life event and that participants would perceive greater past than future opportunity for the more intensely regretted outcome. In addition, a sense of low closure (i.e., continuing to think about the event) should be more associated with regret for the nonrepeatable event (lost opportunity) than the repeatable event (future opportunity). Finally, future opportunity was not confounded with external control or constraint (cf. Roese & Summerville, 2005, Study 2b).

### Method

**Participants.** Twenty-six (3 male and 23 female) students participated in exchange for partial fulfillment of a course requirement.

**Procedure.** Participants received an experiment booklet containing a probe for a repeatable (high future opportunity) regretted life event and a probe for a nonrepeatable (low future opportunity) regretted life event, with order counterbalanced. Participants first read a definition of regret as referring to times when people think about how the past might have been better; they were informed that some of the most commonly regretted life domains were self, education, health, career, family, and finance (i.e., consistent with Roese & Summerville's, 2005, meta-analysis). They were asked to recall a regretted experience in one of these six domains. The repeatable event instructions (Markman & Weary, 1996) read,

Try to think of an outcome or event that provides you with a **future opportunity** to improve upon that outcome or event in the future (i.e., it is a potentially **repeatable** event or outcome).

The nonrepeatable event instructions read,

Try to think of an outcome or event that **does not** provide you with a future opportunity to improve upon that outcome or event in the future (i.e., it is a **nonrepeatable** event or outcome).

After participants read the instructions for the first type of life event, they wrote a brief description of it. They were then asked to rate on scales from 1 (*not at all*) to 9 (*very much*) how easy it is to change this part

**TABLE 2:** Effects of Outcome Type in Study 2

<i>Outcome Type</i>	<i>Nonrepeatable</i>	<i>Repeatable</i>	<i>t(25)</i>
Intensity of regret	6.2 (1.9)	5.3 (2.1)	-2.27*
Continue to think about	5.3 (2.0)	5.2 (1.7)	-0.40
Past opportunity to prevent outcome	6.8 (2.2)	6.8 (2.1)	0.00
Future opportunity to improve outcome	2.9 (2.3)	7.3 (1.5)	5.82**
Easy to change this part of life	2.3 (1.7)	4.7 (1.9)	5.02**

\* $p < .05$ . \*\* $p < .005$ .

of their life, how much they continued to think about this event, how emotionally intense the regret is, how much opportunity they perceived to improve on the event in the future, and how much opportunity they had to prevent the outcome in the past. Next, they read the instructions for and wrote a brief description of the second type of life event and completed the same items. Participants were debriefed and thanked after completing the experiment booklet.

### Results and Discussion

None of the key findings were moderated by gender or order. As predicted, participants experienced more regret after thinking about a nonrepeatable ( $M = 6.2$ ) than a repeatable ( $M = 5.3$ ) regretted life event (see Table 2).

Moreover, as predicted, closure was found to be associated with more intense regret for the nonrepeatable outcome. For the repeatable outcome, regret was not significantly correlated with a tendency to think about the life event,  $r(26) = .21$ ,  $p = .29$ , but for the nonrepeatable outcome, regret was highly correlated with a tendency to think about the life event,  $r(26) = .70$ ,  $p < .001$ . Based on a median split of the thinking about the event variable, regret was no more intense for those who reported low versus high closure on repeatable outcomes,  $M_s = 5.8$  and  $4.9$ ,  $t(24) = 1.14$ ,  $p = .26$ . But regret was significantly more intense for those who reported low versus high closure on nonrepeatable outcomes,  $M_s = 7.1$  and  $5.1$ ,  $t(24) = 3.05$ ,  $p < .006$ ,  $d = 1.20$ .

In all, the results of Study 2 support the lost opportunity principle. When thinking back over their own experiences, participants regretted events they perceived as reflecting lost opportunities more intensely than they regretted events they perceived as reflecting future opportunities. Additionally, a lack of closure regarding the lost opportunity (the nonrepeatable outcome) was associated with more intense regret. Thus, the inability to let go of a lost opportunity appears to have been a significant contributor to regret intensity.

### STUDY 3

The results of Studies 1 and 2 provide clearer support for the lost opportunity principle than they do for the future opportunity principle. The purpose of Study 3 was to test the independent contributions of closure and perceived past and future opportunity to the experience of regret in a diverse, nonstudent sample. In addition, independent judges rated the degree to which participants' regrettable negative life events were high versus low in future opportunity.

#### Method

*Participants.* One hundred fifty-one participants (36 male, 114 female, and 1 who chose not to report his or her gender) completed a survey on life regrets. Participants came from two samples. Of the participants, 24 responded voluntarily and anonymously to a paper survey sent to 200 university faculty via campus mail. The remaining 127 participants responded to a request for participants posted on a social psychology Web site, and they were offered a chance to win a \$100 prize for their participation.

Participants ranged in age from 18 to 69. Ninety-eight participants identified themselves as Caucasian, 11 as African American, 5 as Hispanic, 4 as Native American, 4 as Asian American, 1 as Pacific Islander, and the remaining participants chose not to report their ethnicity.

*Measures.* Items assessing regret, disappointment, and personal responsibility were phrased as "I feel a great deal of . . . the incident I reported," with "regret about," "disappointment about," or "personal responsibility for" replacing the ellipses.

Items assessing past opportunity were "At the time the incident occurred, I had a number of different choices available to me" and "At the time the incident occurred, I had the opportunity to do something different." Items assessing future opportunity were "At the present time, I have the opportunity to do something about the incident," "If I wanted to, I could easily change or undo the incident," "I certainly have the opportunity for positive action to resolve this incident," "I will certainly have opportunities for positive action in incidents similar to the one I reported," and "In the future, I will have an opportunity to undo, or improve upon, the regretted incident I wrote about." The items assessing opportunity were submitted to factor analysis. Two factors with eigenvalues greater than 1 resulted, one containing the two past opportunity items (eigenvalue = 2.75, accounting for 39% of the variance) and the other containing the five future opportunity items (eigenvalue = 1.65, accounting for 24% of the variance). Two scores

were therefore calculated by averaging the past opportunity items into a single score ( $\alpha = .75$ ) and the future opportunity items into a single score ( $\alpha = .79$ ).

A six-item measure of the sense of closure surrounding the life regret was then administered. The items were as follows: "I have complete closure on the regretted incident I wrote about," "The incident seems like ancient history to me," "The incident is a 'closed book' to me," "The incident is 'unfinished business' for me," "I have put the incident behind me completely," and "I just wish I could figure out why the incident happened" (Beike & Wirth-Beaumont, 2005). The items were averaged to form a single closure score ( $\alpha = .81$ ).

*Procedure.* Participants reported the greatest regret of their lives, described it briefly, and chose 1 of the 12 categories identified in Roese and Summerville's (2005) meta-analysis that best described the life domain of the regret. After indicating how long ago the regretted instance took place, participants then rated a series of items about regret, opportunity, and closure on scales from 1 (*not at all*) to 7 (*very much*). Finally, they reported their gender, ethnicity, and age, and were then debriefed and thanked for their participation. Those responding to the electronic survey had the option of clicking a button to move to a different survey Web site and to provide their name and e-mail address for entry into the prize drawing. One participant was randomly selected and awarded the \$100 prize.

#### Results and Discussion

*Characteristics of life regrets.* Consistent with Roese and Summerville (2005), the most frequently reported life domains were romance (29%), self (17%), and education (15%). The six most frequently reported life domains in Roese and Summerville's meta-analysis accounted for 76% of all life regrets in this sample (as opposed to 87% in their meta-analysis). Participants reported events that were quite temporally distant; only 8% reported a life regret that had occurred within the past 6 months.

To determine the extent to which participants chose as their greatest regret outcomes high versus low in future opportunity, four judges blind to hypotheses coded the regrets for future opportunity. Judges were trained to code as 2 regrets for which there was high future opportunity for improvement, in that clear action could be taken in the future to resolve the regretted outcome (e.g., "allowing myself to put on weight"). Judges coded as 1 those outcomes for which there was some future opportunity for improvement, in that the outcome could not be undone but might be prevented from recurring in the future (e.g., "cheating on my significant other"). Finally, judges coded as 0 those outcomes for



**TABLE 3:** Zero-Order Correlations Among Variables in Study 3

	1	2	3	4	5	6	7	8	9
1. Regret	—	.68**	.39**	.19*	-.16	-.38**	-.19*	.14	.03
2. Disappointment		—	.31**	.17*	-.21*	-.29**	-.03	.02	-.03
3. Responsibility			—	.16	-.20*	-.01	.00	.42**	.06
4. Gender				—	-.25*	-.13	-.03	.01	.04
5. Age					—	-.01	-.19*	-.27**	-.16
6. Closure						—	.07	.13	.09
7. How long ago							—	.22**	-.03
8. Past opportunity								—	.03
9. Future opportunity									—

\* $p < .05$ . \*\* $p < .005$ .

which there was no future opportunity for improvement, in that the outcome could neither be resolved nor prevented as it would not occur again in the future (e.g., “having abandoned my younger brother to leave my dysfunctional family environment”).

Interrater reliability was high (Cohen’s  $k$ appas ranged from .20 to .45, all significant, with an overall alpha of .71), so the ratings were averaged together. The average future opportunity score was 0.8; 49% of the life regrets received an average rating lower than 1 (some future opportunity), and only 1% received an average rating of 2 (high future opportunity). Consistent with the lost opportunity principle, then, virtually none of participants’ reported life regrets were coded as high in future opportunity, and half were coded as merely preventable from recurring but not remediable. In [Roese and Summerville’s \(2005\)](#) terms, the door to corrective action was perceived by the coders as closed rather than open for almost all of the reported life regrets. Participants’ own ratings suggest a similar conclusion. For example, 68% of participants strongly disagreed with the single item “If I wanted to, I could easily change or undo the incident.” Moreover, and consistent with the lost opportunity principle, participants themselves perceived their reported life regret as having provided greater opportunity for change in the past ( $M = 5.3$ ,  $SD = 1.6$ ) than opportunity for change in the future ( $M = 3.3$ ,  $SD = 1.6$ ),  $t(150) = 11.10$ ,  $p < .001$ ,  $d = 1.3$ .

*Predictors of regret intensity.* To further explore the predictors of regret intensity, demographic variables, ratings of disappointment ([van Dijk & Zeelenberg, 2002](#)) and personal responsibility ([Connolly & Zeelenberg, 2002](#)), length of time since the regretted life event occurred, perceptions of past and future opportunity, and closure were submitted to a simultaneous regression analysis. (Table 3 displays the zero-order correlation matrix for this analysis). The results of the regression analysis, displayed in Table 4, support the lost opportunity principle. Even after accounting for

the other variables, greater perceived past opportunity was a significant predictor of regret intensity, whereas perceived future opportunity was not a significant predictor. Moreover, closure emerged as an additional independent predictor of regret intensity. Thus, empirical support was garnered for the lost opportunity principle: Reported life regrets were characterized by greater perceived past than future opportunity to correct the negative outcome, perceived past opportunity was positively associated with regret intensity, and closure was negatively associated with regret intensity.

Notably, closure on the regretted outcome was unrelated to perceived future opportunity. However, the inability to let go of a lost opportunity does not imply that one feels the outcome is remediable in the future, only that it remains a matter of current concern ([Nikula, Klinger, & Larson-Gutman, 1993](#)). Therefore, thoughts of the regretted outcome intrude upon awareness, and the memory of the experience feels fresh and emotionally intense rather than pallid or dated ([Beike et al., 2007](#); [Beike & Wirth-Beaumont, 2005](#)). A regretted outcome that feels low in closure is analogous to the notion of a salient lost possible self ([King & Hicks, 2007](#)).

## GENERAL DISCUSSION

Three studies reveal stronger support for the lost opportunity principle of experienced regret than for the future opportunity principle of experienced regret. The lost opportunity principle specifies that the most intensely experienced regrets are characterized by (a) the perception that there were abundant opportunities in the past to prevent or change the outcome but that the outcome is no longer amenable to change in the future and (b) an inability or unwillingness to disengage from the lost possible self (i.e., low closure).

Providing empirical support for the lost opportunity principle, Study 1 found that more commonly regretted domains (such as career, education, and romance) are

**TABLE 4:** Predictors of Intensity of Regret About Greatest Life Regret in Study 3

Variable	B	SE B	$\beta$
Disappointment	.53	.06	.55**
Personal responsibility	.14	.06	.16*
Gender	.09	.20	.03
Age	.00	.01	.00
How long ago	-.14	.04	-.18**
Closure	-.24	.06	-.23**
Past opportunity	.12	.06	.13*
Future opportunity	.05	.05	.05

NOTE:  $R^2 = .58$  ( $p < .001$ ).\* $p < .05$ . \*\* $p < .005$ .

perceived to be less amenable to change in the future than are less commonly regretted domains (such as health, friends, and spirituality), and Study 2 showed that outcomes eliciting perceptions of lost opportunities are regretted more intensely than are outcomes that offer corrective opportunities in the future. In turn, the results of Study 3 indicated that people's greatest life regrets are perceived as offering virtually no future opportunity for corrective action. Additionally, Studies 2 and 3 found that regret intensity is associated with feelings of low closure regarding these lost opportunities. Finally and importantly, the results of all three studies support the prediction that outcomes for which there is perceived to be less opportunity in the future than there was in the past would be regretted more intensely. As theorized, people appear to regret most intensely those outcomes that they perceive they once could have prevented but can no longer change, especially when they are unable to achieve closure.

#### *Reconciling the Present Data With Findings That Support the Future Opportunity Principle*

Previous research has demonstrated that providing opportunities can decrease choice satisfaction (e.g., D. T. Gilbert & Ebert, 2002; Iyengar & Lepper, 2000; Linder, Cooper, & Jones, 1967). On the basis of these findings, Roese and Summerville (2005) extrapolated that future opportunity is fundamental to regret, which is why outcomes for which corrective action is still possible should be most intensely regretted. Conversely, we contend that lost opportunity is fundamental to regret, which is why outcomes for which no corrective action is possible should be most intensely regretted. But, if our contention is correct, then why have some studies shown that future opportunity can decrease satisfaction? One answer lies in understanding the temporal course of regret: from perceived opportunity for action to perceived failure to act (Gilovich & Medvec, 1994). At the time a choice is made, one may have many

options or believe that change is possible. These alternatives may evoke perceptions of future opportunity, but such perceptions are fleeting and quickly transform into perceptions of (and ruminations about) lost opportunity via two mechanisms.

First, future opportunity transforms into lost opportunity soon after the decision maker takes action. Once a commitment to a choice is made, available opportunities become psychologically unavailable and represent lost opportunities. Second, future opportunity transforms into lost opportunity if the decision maker refrains from acting for such a long time that the opportunity eventually expires. As people age, change locations, and end relationships, once-evident opportunities are no longer available. Having once perceived future opportunities that are no longer available increases the sense of lost opportunity and intensifies regret. Whether perceived future opportunity transforms into lost opportunity quickly or slowly depends on the decision maker. If he or she experiences an undesired outcome after acting, he or she experiences regret immediately, but if he or she experiences an undesired outcome after failing to act, he or she experiences regret in the longer term (Gilovich & Medvec, 1994). The time course of regret, therefore, depends on how long it takes future opportunity to morph into lost opportunity.

Because personal responsibility appears to be a necessary condition for evoking regret (Connolly & Zeelenberg, 2002), events that provide no choice opportunities (e.g., when an outcome is externally controlled) yield little or no postoutcome regret. For events that do involve personal responsibility for choices, however, the intensity of regret experienced should be reduced to the extent that future opportunities seem attainable (Boninger et al., 1994; McMullen & Markman, 2002; Sanna, 1997). Opportunity suggests that multiple paths to goal attainment remain, thereby affording hope, and hopeful people can readily identify alternative routes if one route is blocked (Snyder et al., 1991). For example, a man who has been unfaithful to his girlfriend undermines his own goal of being a good partner. If he ruminates on the discrepancy and is unable to achieve closure by setting the situation aside, he will feel regret. Moreover, if he cannot find alternative paths that allow him to attain the goal, his regret will intensify. On the other hand, if he can identify alternative paths (e.g., apologizing to his girlfriend, undergoing counseling), he will experience hope and his regret will be mitigated.

Potentially repeatable outcomes elicit less regret than do nonrepeatable outcomes because they offer greater hope. Repeatable outcomes contain at least one salient alternative path toward achieving a goal: Do it right the next time. Conversely, nonrepeatable outcomes more strongly suggest the absence of alternative paths toward

a goal: That was your last chance. Thus, future opportunity allows people to visualize alternative paths, enhancing hope and diminishing regret. Roese and Summerville's (2005) future opportunity principle does not account for two important phenomena: (a) the hopeful nature of future opportunity and (b) the fact that future opportunities often expire, leaving behind a lingering, regret-inducing sense of lost opportunity.

#### *Dissonance Reduction and Psychological Closure*

Another way to resolve the tension between the future opportunity and lost opportunity principles is to regard dissonance reduction as a special case of a more general mechanism of emotion regulation and psychological closure (D. T. Gilbert & Ebert, 2002; D. T. Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Gross, 2001; Larsen, 2000). Dissonance reduction occurs when people resolve inconsistencies between their beliefs and their behaviors, resulting in reduced psychological discomfort (Elliot & Devine, 1994). Psychological closure occurs when people think about a life experience from a more distanced perspective, resulting in reduced emotional reactions to memories of the experience (Beike et al., 2007; Beike & Wirth-Beaumont, 2005). In fact, psychological closure seems to protect against the unpleasant feelings that can arise from inconsistencies between memories and one's sense of self (Beike & Landoll, 2000). In other words, closure obviates the need for dissonance reduction.

If dissonance reduction is viewed as a subtype of a broader category of psychological closure and emotion regulation mechanisms, then Roese and Summerville's (2005) conceptualization of opportunity and our conceptualization of low psychological closure are analogous, as both intensify regret. Roese and Summerville posited that intense regret is experienced when people suspend their dissonance reduction efforts in light of opportunities to take corrective action. We theorize instead that intense regret is experienced when emotion regulation processes fail and people are either unable or unwilling to gain closure on an undesired outcome.

It may seem, then, that the lost opportunity principle simply substitutes low closure for the future opportunity principle's suspended dissonance reduction efforts. But once again, it is necessary to consider the time course of decision making and reflection. The first few moments following a binding decision are ripe for the experience of cognitive dissonance, particularly if that decision entails foreseeable negative consequences (Cooper & Fazio, 1984). The experience of postdecisional dissonance is therefore the primary source of immediate feelings of regret. But the psychological immune system will diminish this immediate surge of regret in a surprisingly short time (D. T. Gilbert et al.,

1998). The experience of regret may recur when people reflect on a decision that led to an undesired outcome months or years later, as in these studies. At that temporally distant point, dissonance reduction efforts take a back seat to closure and emotion regulation mechanisms that may occur during reflection.

Two processes that may occur during reflection that are particularly germane to the continued experience of regret are the counterfactual fallacy and self-centrality, because both interfere with closure. People who fall prey to the counterfactual fallacy may have difficulty attaining closure on an undesired outcome over the longer term, as counterfactual thoughts transform "what could have happened" into "what should have happened" (Miller & Turnbull, 1990). For example, a man who bypasses the opportunity to date a supermodel will experience greater regret if he construes his life with the supermodel as not only what he could have had but also what he should have had. People who see the undesired outcome as highly important to the self may also have difficulty gaining closure on an undesired outcome over the longer term (Berntsen & Rubin, 2007). For example, a woman who never fulfilled her dream of going to medical school would experience greater regret to the extent that she views the fulfillment of this dream as central to her identity. To summarize, suspended dissonance reduction may be critical to the experience of regret in the first postdecisional moments and for more mundane choices, such as choices between photographs or posters in laboratory studies. However, closure and emotion regulation processes such as the counterfactual fallacy and self-concept centrality may be critical to the experience of regret over the longer term and for major life regrets, such as those investigated in this research and in Roese and Summerville's (2005) studies.

#### *Implications for the Function of Regret*

The results of these studies suggest that people regret the times they could have prevented a negative outcome but can no longer remedy it, particularly when such outcomes are recollected with a sense of low psychological closure. The lost opportunity pattern implies a somewhat different function of regret than does the future opportunity principle. Regret can certainly motivate corrective action (e.g., Zeelenberg & Pieters, 2004) but this is more likely to be the case in the short term, before the opportunity is perceived as belonging to the past rather than to the future. In the long term, on the other hand, regretting lost opportunities may serve a more general learning function. Alternative paths to achieving the same goal are not apparent for lost opportunities. Instead, regretting lost opportunities reminds people not to lose out on other current opportunities. Hence, regret motivates people to seize the day.

Because regret is a teacher in this more general way, people continue to experience regret throughout their lives, with the perception of blocked goals in one domain drawing attention to attainable goals in other domains. People do, in fact, seem to trade off the pursuit of one goal for alternative goals (e.g., Shah, Friedman, & Kruglanski, 2002), and regretting lost opportunities may facilitate the process of turning attention and motivation toward opportunities that are still available in other domains (King & Hicks, 2007). When people successfully substitute an attainable goal for a blocked goal, they create possibilities for achievement. Thus, the 85-year-old woman who regrets never having given birth to her own child focuses her energies instead on spending time with loved ones (Wrosch et al., 2005).

Such goal substitution allows older adults, despite their perceptions of decreasing opportunities, to nonetheless maintain a more positive affective state than younger adults (Carstensen, Pasupathi, Mayr, & Nesselroade, 2000). Older adults focus on short-term, emotion-focused goals that they can still achieve—a developmental course that is integral to healthy adult development (King & Hicks, 2007; Lang & Carstensen, 2002). Moreover, by intensifying regret, low closure may enhance one's willingness to redirect energy toward achievable goals. To echo the quote that began this article, regretting lost opportunities may help people identify new follies to commit while the opportunity still exists.

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